

Claims

1. Intramedullary nail (1) with a distal end (2) for insertion into the medullary canal, a proximal end (3), a central axis (4) and a generally rod-like shape over the hole length L,

characterized in that

A) said nail (1) has three distinct locking sections (5,6,7) with at least one through-hole (8) each for receiving locking screws whereby said three locking sections (5,6,7) are separated from each other by two distinct intermediate sections (9,10) having less through-holes (8) per length unit than each of said locking sections (5,6,7); and

B) said proximal locking section (5) having the length L_5 and said first intermediate section (9) having the length L_9 are arranged at an angle β in the range of $7^\circ < \beta < 13^\circ$.

2. Intramedullary nail (1) according to claim 1, characterized in that said distinct intermediate sections (9,10) have no through-holes (8)

3. Intramedullary nail (1) according to claim 1 or 2, characterized by

A) a proximal locking section (5) extending from said proximal end (3) over the distance $0,22 L < L_5 < 0,28 L$ in direction of said distal end (2) and having a distal boundary (11);

B) a distal locking section (6) extending from said distal end (2) over the distance $0,18 L < L_6 < 0,22 L$ in direction of said proximal end (3) and having a proximal boundary (12); and

C) an isthmus locking section (7) located between said distal and proximal locking sections (5,6) with a proximal boundary (13) and a distal boundary (14) and a length of $0,08 L < L_7 < 0,15 L$.

4. Intramedullary nail (1) according to claim 3, characterized in that said proximal boundary (13) of said isthmus locking section (7) has a distance $0,27 L < L_9 < 0,33 L$ to said distal boundary (11) of said proximal locking section (5).

5. Intramedullary nail (1) according to claim 3 or 4, characterized in that said distal boundary (14) of said isthmus locking section (7) has a distance $0,13 L < L_{10} < 0,30 L$ to said proximal boundary (12) of said distal locking section (6).

6. Intramedullary nail (1) according to one of the claims 3 to 5, characterized in that $0,32 L < (L_{10} + L_8) < 0,50 L$.

7. Intramedullary nail (1) according to one of the claims 1 to 6, characterized in that it has a first intermediate section (9) having the length L_9 between said proximal locking section (5) and said isthmus locking section (7) and preferably having no through holes (8).

8. Intramedullary nail (1) according to one of the claims 1 to 7, characterized in that said it has a second intermediate section (10) between said distal locking section (6) and said isthmus locking section (7) having the length L_{10} and preferably having no through holes (8).

9. Intramedullary nail (1) according to one of the claims 1 to 8, characterized in that said isthmus locking section (7) has two through holes (8), preferably arranged at a relative angle α in the range of $60^\circ < \alpha < 120^\circ$.

10. Intramedullary nail (1) according to one of the claims 1 to 9, characterized in that the through hole (8) which is located nearest to said distal end (2) has a distance L_D to said distal end (2) in the range of $0,01 L < L_D < 0,38 L$.

11. Intramedullary nail (1) according to one of the claims 1 to 10, characterized in that the through hole (8) which is located nearest to said proximal end (3) has a distance L_P to said proximal end (3) in the range of $0,01 L < L_P < 0,70 L$.